Physics Seminar: Oscar Varela

Wednesday, May 1 · 2:30 – 3:30pm

Location: 313
Title: An Exceptional Approach to Kaluza-Klein Spectroscopy

Abstract: The spectrum of light single-trace operators of holographic CFTs at strong coupling and large N, can be mapped to the spectrum of Kaluza-Klein (KK) excitations over the dual AdS supergravity solutions. Computing these KK spectra is usually a difficult task even for the simplest AdS solutions. In this talk, I will review new spectral methods based on Exceptional Field Theory, a duality-covariant reformulation of the higher-dimensional supergravities. For certain AdS/CFT dual pairs, these methods bypass the difficulties and reduce the KK spectral problem to simple diagonalisation of suitable mass matrices. I will illustrate these methods for the class of AdS4 solutions of M-theory and type II string theory that uplift consistently from D=4 maximal gauged supergravities. Also, I will describe progress to extend these methods to AdS solutions that uplift from half-maximal supergravities.